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Claims

- 1 – A device for positioning a guiding tube (1) for nephroscope, using an aspiration needle (2), fitted with a needle sleeve (7) and a closing mandrin (3), used as guiding means for an inflatable enlargement device (4, 36) equipped with a cuff (25, 41) filled with an inflation fluid, characterised in that said inflatable enlargement device (4, 36) is comprised of a sliding tube (13, 39) likely to slide along the aspiration needle (2) of a support tube (15, 40), around which the cuff (25, 41) is secured, surrounding the sliding tube (13, 39), whose inner diameter is inferior to the inner diameter of the support tube (15, 40) constituting an inflation fluid circulation space which communicates through a first orifice (29, 42) with the inside of the cuff (25, 41) and through a second orifice with a filling tube (31, 57), equipped with a closing device (67, 60) connected to a first connection interface device (32, 60) likely to cooperate with a second connection interface device (66, 61) communicating with an inflation fluid supply device (65, 68), the support tube (15, 40) being connected by at least one of its ends (16, 17, 44) to the sliding tube (13, 39) in a sealed manner, a first sliding tube end (18) of sliding tube (13) comprising at least two cutting blades (19, 46) making up a trocar and a second sliding tube end (33) comprising a handling sleeve (34, 53).
- 2 – A device according to claim 1, characterised in that sealing between a first and a second end (16, 17) of support tube (13) and sliding tube (15) is obtained by shrinkage or by positioning a centring plug (43) between the sliding tube (13) and the support (15), followed by a sealing process by introduction of weld by capillarity between the sliding and support tubes (13, 15) and the centring plug, or by overmoulding a sealing cylinder (64) made of plastic material.
- 3 – A device according to claim 1, characterised in that a closing device (67) is comprised of a ball-type device whose ball is pressed against a tapered seat by a spring, and which allows the inflation fluid of supply device (65) to flow towards the cuff (25), but which prevents said inflation fluid from flowing back.

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4 – A device according to claim 1, characterised in that a second connection interface (66) is comprised of a male cone which engages into a female cone, comprising a first connection interface device (32).

5 – A device according to claim 1, characterised in that a rubber plug (60) makes up a first connection interface and closing device, cooperating with a second connection interface device comprised of a needle (61).

6 – A device according to claim 1, characterised in that a supply device (65, 68) is comprised of a syringe, featuring a cylindrical chamber in which a piston slides, whose control rod is threaded and screwed into a nut, solid with the chamber.

10 7 – A device according to claim 1, characterised in that a cutting blade (19, 46) features an essentially triangular shape with a first blade side (20, 48) secured to the sliding tube (13, 39) along one of its generatrices, whereas a second blade side (23, 49) which includes a cutting thread forms an angle with the first blade side (20), whose top essentially coincides with the first sliding tube end (18), to the order of five to ten degrees.

15 8 – A device according to claims 1 and 7, characterised in that the cutting blades (19, 46) are in the number of four to six.

9 – A device according to claim 7, characterised in that an attachment process for the cutting blades (19) onto the sliding tube (13) consists of laser welding.

10 – A device according to claim 7, characterised in that an attachment method for the sliding tube (39), the cutting blades (46), comprising blade holes (47), along the first blade side (48), consists of encasing the base of the cutting blades (46) in a truncated revolution cone (52), made of plastic material, thereby encasing the sliding tube (39), whereas the cutting blades (46) are locked with respect to the sliding tube (39) by the plastic material passing through the blade holes (47).

11 – A device according to claim 1, characterised in that a handling sleeve (34) covers the part of the sliding tube (13) which is located next to the second sliding tube end (33), the part of the support tube (15) and of the filling tube (31) located next to the second support tube end (17).

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12 - A device according to claims 1 and 5, characterised in that a handle sleeve (53) is manufactured by overmoulding plastic material with a first solid first part of sleeve (54) covering a part of support tube (40), a second part of sleeve (56) being hollowed in order to constitute the filling tube (57), ending by a sleeve neck (59), open to the outside, and through which the sliding
5 tube (39) passes, coaxially, and likely to be closed by a rubber plug (60).

13 - A device according to claim 1, characterised in that the closing mandrin (3) is of form memory type, whereas the needle sleeve (7) comprises a removable part whose removal permits inserting the closing mandrin further into the needle sleeve and thereby forming an arrester elbow.

14 - A device according to claim 1, characterised in that the outer surface of cuff (25, 41) is coated
10 with a substance which becomes sticky at water contact in order to lubricate the guide tube (1,36) for sliding along said cuff.